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# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.

169.1763

First Named Inventor or Application Identifier

TIMOTHY MERRICK LONG

Express Mail Label No.

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

## ADDRESS TO:

Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

1. ☐ Fee Transmittal Form  
(Submit an original, and a duplicate for fee processing)

2. ☒ Specification Total Pages

3. ☒ Drawing(s) (35 USC 113) Total Sheets

4. ☒ Oath or Declaration Total Pages

a. ☐ Newly executed (original or copy)

b. ☒ Unexecuted for information purposes

c. ☐ Copy from a prior application (37 CFR 1.63(d))  
(for continuation/divisional with Box 17 completed)  
**[Note Box 5 below]**

i. ☐ **DELETION OF INVENTOR(S)**  
Signed Statement attached deleting  
inventor(s) named in the prior application, see  
37 CFR 1.63(d)(2) and 1.33(b).

5. ☐ Incorporation By Reference (useable if Box 4c is checked)  
The entire disclosure of the prior application, from which a copy of  
the oath or declaration is supplied under Box 4c, is considered as  
being part of the disclosure of the accompanying application and is  
hereby incorporated by reference therein.

6. ☐ Microfiche Computer Program (Appendix)

7. Nucleotide and/or Amino Acid Sequence Submission  
(if applicable, all necessary)

a. ☐ Computer Readable Copy

b. ☐ Paper Copy (identical to computer copy)

c. ☐ Statement verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

8. ☐ Assignment Papers (cover sheet & document(s))

9. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney  
(when there is an assignee)

10. ☐ English Translation Document (if applicable)

11. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS  
Citations

12. ☐ Preliminary Amendment

13. ☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)

14. ☐ Small Entity ☐ Statement filed in prior application  
Statement(s) Status still proper and desired

15. ☐ Certified Copy of Priority Document(s)  
(if foreign priority is claimed)

16. ☐ Other: \_\_\_\_\_

17. If a CONTINUING APPLICATION, check appropriate box and supply the requisite information:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No. \_\_\_\_/\_\_\_\_

## 18. CORRESPONDENCE ADDRESS

☒ Customer Number or Bar Code Label

05514

(Insert Customer No. or Attach bar code label here)

or ☐ Correspondence address below

NAME

Address

City

State

Zip Code

Country

Telephone

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CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS (37 CFR 1.16(c))	28-20 =	8	X \$ 18.00 =	\$ 144.00
	INDEPENDENT CLAIMS (37 cfr 1.16(b))	12-3 =	9	X \$ 78.00 =	\$ 702.00
	MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d))			\$260.00 =	\$ -0-
				BASIC FEE (37 CFR 1.16(a))	\$ 690.00
			Total of above Calculations =		\$1536.00
	Reduction by 50% for filing by small entity (Note 37 CFR 1.9, 1.27, 1.28).				
	TOTAL =				\$1536.00

19. Small entity status


- a. ☐ A Small entity statement is enclosed
- b. ☐ A small entity statement was filed in the prior nonprovisional application and such status is still proper and desired.
- c. ☐ Is no longer claimed.

20. ☒ A check in the amount of \$ 1536.00 to cover the filing fee is enclosed.

21. ☐ A check in the amount of \$ \_\_\_\_\_ to cover the recordal fee is enclosed.

22. The Commissioner is hereby authorized to credit overpayments or charge the following fees to Deposit Account No. 06-1205:

- a. ☒ Fees required under 37 CFR 1.16.
- b. ☒ Fees required under 37 CFR 1.17.
- c. ☐ Fees required under 37 CFR 1.18.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED	
NAME	Leonard P. Diana (29,296)
SIGNATURE	
DATE	July 6, 2000

# COMBINING A PLURALITY OF IMAGES AND TRANSFORMING AN IMAGE HAVING ASSOCIATED META-DATA

## Field of Invention

The present invention relates generally to a method and apparatus for combining  
5 a plurality of images and transforming an image having associated meta-data. The  
invention also relates to a computer program product including a computer readable  
medium having recorded thereon a computer program for combining a plurality of images  
and transforming an image having associated meta-data.

## Background Art

10 Many digital image formats include meta-data which records aspects of an image  
that are in addition to the raw digital image pixel data. Examples of such attributes  
include a copyright notice, type of capture device, flash usage, type of lens, date of  
capture, programs the image has been edited with, regions of interest, and more. In many  
image formats there are both well known meta-data items which, because of their  
15 standard-mandated identifiers and format, can be programmatically processed, as well as  
application specific meta-data items. These application specific meta-data items may be  
related to only one or a few programs or may be end-user invented and thus not  
programmatically interpretable by any particular application.

There exist many computer application programs which combine digital images  
20 in various ways, or transform a single image. Examples include image editors such as  
Adobe PhotoShop. Other examples include panorama stitching applications that combine  
two or more partially overlapping images of the same scene into a single larger digital  
image. When these applications produce a new digital image from one or more original  
digital images they must make decisions on what meta-data from the original image(s) is  
25 passed to the new image, what meta-data is discarded, or modified in some way.

Typically, meta-data copying actions may be taken on specific meta-data elements, which have well known characteristics. For example, a program may preserve all copyright notices from all source images in the composite image because the characteristics of copyright notices are known to the application designer. However, these applications  
5 suffer from the disadvantage of being inflexible in that they are limited to specific well known meta data elements.

### Summary of the Invention

According to one aspect of the invention there is provided a method of combining digital image meta-data by storing self-describing attribute tags with one or  
10 more meta-data elements, each such attribute describing the action to be taken with this meta-data element and a similarly identified meta-data element from a second digital-image when the two images are combined.

According to another aspect of the invention there is provided a method of updating meta-data of an digital image by storing self describing attribute tags with one or  
15 more meta-data elements, each such attribute describing the action to be taken with this meta-data element when the digital image is transformed.

According to another aspect of the invention there is provided a method of combining a plurality of images, wherein one or more of said plurality of images each have associated therewith meta-data comprising at least one meta-data element having at  
20 least one attribute tag which describes an action to be taken with said meta-data element when said plurality of images are combined, the method comprising the steps of: reading said at least one attribute to identify said action; and combining the meta-data elements of the plurality of images in accordance with said action.

According to another aspect of the invention there is provided a method of  
25 transforming an image, whercin said image has associated therewith meta-data

comprising at least one meta-data element having at least one attribute tag which describes an action to be taken with said meta-data element when said image is transformed, the method comprising the steps of: reading said at least one attribute to identify said action; and updating the at least one meta-data element of the image in  
5 accordance with said action.

According to another aspect of the invention there is provided apparatus for combining digital image meta-data by storing self-describing attribute tags with one or more meta-data elements, each such attribute describing the action to be taken with this meta-data element and a similarly identified meta-data element from a second digital-  
10 image when the two images are combined.

According to another aspect of the invention there is provided apparatus for updating meta-data of an digital image by storing self describing attribute tags with one or more meta-data elements, each such attribute describing the action to be taken with this meta-data element when the digital image is transformed.

15 According to another aspect of the invention there is provided apparatus for combining a plurality of images, wherein one or more of said plurality of images each have associated therewith meta-data comprising at least one meta-data element having at least one attribute tag which describes an action to be taken with said meta-data element when said plurality of images are combined, the apparatus comprising: means for reading  
20 said at least one attribute to identify said action; and means for combining the meta-data elements of the plurality of images in accordance with said action.

According to another aspect of the invention there is provided apparatus for transforming an image, wherein said image has associated therewith meta-data comprising at least one meta-data element having at least one attribute tag which  
25 describes an action to be taken with said meta-data element when said image is

transformed, the apparatus comprising: means for reading said at least one attribute to identify said action; and means for updating the at least one meta-data element of the image in accordance with said action.

According to another aspect of the invention there is provided computer readable  
5 medium including a computer program for combining digital image meta-data by storing self-describing attribute tags with one or more meta-data elements, each such attribute describing the action to be taken with this meta-data element and a similarly identified meta-data element from a second digital-image when the two images are combined.

According to another aspect of the invention there is provided computer readable  
10 medium including a computer program for updating meta-data of an digital image by storing self describing attribute tags with one or more meta-data elements, each such attribute describing the action to be taken with this meta-data element when the digital image is transformed.

According to another aspect of the invention there is provided computer readable  
15 medium including a computer program for combining a plurality of images, wherein one or more of said plurality of images each have associated therewith meta-data comprising at least one meta-data element having at least one attribute tag which describes an action to be taken with said meta-data element when said plurality of images are combined, the computer program comprising: code for reading said at least one attribute to identify said  
20 action; and code for combining the meta-data elements of the plurality of images in accordance with said action.

According to another aspect of the invention there is provided computer readable  
medium including a computer program for transforming an image, wherein said image has associated therewith meta-data comprising at least one meta-data element having at  
25 least one attribute tag which describes an action to be taken with said meta-data element

when said image is transformed, the computer program comprising: code for reading said at least one attribute to identify said action; and code for updating the at least one meta-data element of the image in accordance with said action.

### **Brief Description of the Drawings**

5 A number of preferred embodiments of the present invention will now be described with reference to the drawings, in which:

Fig. 1A shows a flow chart of a method of combining a plurality of images in accordance with a preferred embodiment;

10 Fig. 1B shows a flow chart of a method of transforming an image in accordance with a preferred embodiment; and

Fig. 2 shows a general purpose computer for implementing the preferred methods.

### **Detailed Description**

15 In the preferred embodiments any digital image meta-data elements may be augmented with an attribute which describes how that meta-data element from multiple images should be merged when the images are merged, or a new transformed image is created. The meta-data associated with a digital image is preferable recorded in XML format in a portion of the digital image. However, that many other methods of storing meta-data in a digital image exist and could be used without departing from the spirit and scope of the invention. For example, the tag method of the TIFF image file format and  
20 the Structured Storage mechanism of the Flashpix image file format. And example of meta-data in XML format could be:

```
<?xml version="1.0">
```

```
<PHOTO>
```

```
<Photo_Number>62</Photo_Number>
```

```
<Lens>EF85mm f/1.2L USM</Lens>
```

```
<Creator>Takashi Mochizuki</Creator>
```

<Copyright>Takashi Mochizuki, 1999</Copyright>

<ModelRelease desc="Man in blue suit"

release="yes" ref="MR45621" />

<EyeLocation>123 546 130 600</EyeLocation>

5

</PHOTO>

The preferred embodiment adds attributes to each XML element of the digital image meta-data to describe how that element should be combined with like elements of other digital images when those images are combined. Similar mechanisms could be employed in other XML based meta-data storage formats. The preferred embodiment allows the following merging attributes with the given interpretation:

10

**discard** These elements should be discarded and no element of this name placed in the final image upon transformation or combination. An example of an element of this type is a region of interest which will become invalid through most transformations.

15

**keepboth** These elements should each be kept. Both should be placed in the final image. An example of this type of element is a legal notice such as a model release note.

20

**keepsame** These elements should be kept as a single attribute if they have the same value, else both should be discarded. Example of these elements are camera capture characteristics such as whether a flash was used and date of capture.

**keepone** One of these elements should be chosen and copied to the final image at the application's discretion. Examples of these elements are captions or titles.

Other merging attributes are possible.

25

In the preferred embodiment the default action when no explicit merge attribute is supplied with a meta-data element is the *keepsame* action.



An example of some digital-image meta-data with these attributes incorporated could be:

```
<?xml version="1.0">
<PHOTO>
5      <Photo_Number>62</Photo_Number>
      <Lens>EF85mm f/1.2L USM</Lens>
      <Creator merge="keepboth">Takashi Mochizuki</Creator>
      <Copyright merge="keepboth">Takashi Mochizuki, 1999</Copyright>
      <ModelRelease merge="keepboth" desc="Man in blue suit"
10      release="yes" ref="MR45621" />
      <EyeLocation merge="discard">123 546 130 600</EyeLocation>
</PHOTO>
```

Turning now to Fig. 1A, there is shown a method 100 of combining a plurality of images. The images have associated therewith meta-data comprising at least one meta-  
15 data element having at least one attribute tag. These attribute tags describe a merging action to be taken with the meta-data element when the plurality of images are combined, as previously described. Preferably, this meta data is recorded in XML format in a portion of the image. The meta data can be automatically or manually constructed using an XML editor of a known type. The method 100 preferably forms a sub-module of a  
20 software application, which can combine images in various ways. The method 100 is called by the software application when two or more images are in the process of being combined. The method 100 starts at step 102 where the meta data of all the images to be combined are individually retrieved and any necessary parameters are initialised. During the next step 104, the method 100 reads each meta data associated with each image and  
25 identifies the merging attributes of the meta-data elements. In the case where a meta-data element has no merging attributes, the method 100 supplies the meta-data element in

question with a default merging attribute. The method reads the merging attributes of the common meta-data elements of the images and identifies the actions to be performed. By utilising a common XML format, the action indicated by the merging attributes of each common meta-data element of the images should be the same. The method then proceeds  
5 to step 106, where the method combines the meta-data elements of the plurality of images in accordance with the identified actions and stores the combined meta-data elements as meta data associated with the combined image. The manner in which these meta data elements are combined are described above. The method then terminates 108 and returns to the main software application.

10 Turning now to Fig. 1B, there is shown a method 100 of transforming an image. The image has associated therewith meta-data comprising at least one meta-data element having at least one merging attribute tag. These merging attribute tags describe an action to be taken with said meta-data element when the image is transformed, as previously described. Preferably, this meta data is recorded in XML format in a portion of the  
15 image. The meta data can be automatically or manually constructed using an XML editor of a known type. The method 110 preferably forms a sub-module of a software application, which can transform an image in various ways. The method 110 is called by the software application when an image is in the process of being transformed. The method 110 starts at step 112 where the meta data of the image is retrieved and any  
20 necessary parameters are initialised. During the next step 114, the method 110 reads the meta data associated with the image and identifies the merging attributes of the meta-data elements. In the case where a meta-data element has no merging attributes, the method 110 supplies the meta-data element in question with a default merging attribute. The method reads the merging attributes of the image and identifies the actions to be  
25 performed. The method then proceeds to step 116, where the method updates the meta-

data elements of the image in accordance with the identified actions and stores the updated meta-data elements as meta data associated with the transformed image. The manner in which these meta data elements are updated are described in more detail above. The method then terminates 118 and returns to the main software application.

5           The preferred methods of combining a plurality of images and transforming an image are preferably practiced using a conventional general-purpose computer system 200, wherein the processes may be implemented as software, such as an application program executing within the computer system 200. In particular, the steps of the preferred methods of combining a plurality of images and transforming an image are  
10       effected by instructions in the software that are carried out by the computer. The software may be divided into two separate parts; one part for carrying out the preferred methods; and another part to manage the user interface between the latter and the user. The software may be stored in a computer readable medium, including the storage devices described below, for example. The software is loaded into the computer from the  
15       computer readable medium, and then executed by the computer. The use of the computer readable medium comprising the computer program in conjunction with the computer preferably effects an advantageous apparatus for implementing the preferred methods in accordance with the embodiments of the invention.

          The computer system 200 comprises a computer module 201, input devices such  
20       as a keyboard 202 and mouse 203, output devices including a printer 215 and a display device 214. A Modulator-Demodulator (Modem) transceiver device 216 is used by the computer module 201 for communicating to and from a communications network 220, for example connectable via a telephone line 221 or other functional medium. The modem 216 can be used to obtain access to the Internet, and other network systems, such  
25       as a Local Area Network (LAN) or a Wide Area Network (WAN).

The computer module 201 typically includes at least one processor unit 205, a memory unit 206, for example formed from semiconductor random access memory (RAM) and read only memory (ROM), input/output (I/O) interfaces including a video interface 207, and an I/O interface 213 for the keyboard 202 and mouse 203 and optionally a joystick (not illustrated), and an interface 208 for the modem 216. A storage device 209 is provided and typically includes a hard disk drive 210 and a floppy disk drive 211. A magnetic tape drive (not illustrated) may also be used. A CD-ROM drive 212 is typically provided as a non-volatile source of data. The components 205 to 213 of the computer module 201, typically communicate via an interconnected bus 204 and in a manner which results in a conventional mode of operation of the computer system 200 known to those in the relevant art. Examples of computers on which the embodiments can be practised include IBM-PC's and compatibles, Sun Sparcstations or alike computer systems evolved therefrom.

Typically, the application program of the preferred embodiments is resident on the hard disk drive 210 and read and controlled in its execution by the processor 205. Intermediate storage of the program and any data fetched from the network 220 may be accomplished using the semiconductor memory 206, possibly in concert with the hard disk drive 210. In some instances, the application program may be supplied to the user encoded on a CD-ROM or floppy disk and read via the corresponding drive 212 or 211, or alternatively may be read by the user from the network 220 via the modem device 216. Still further, the software can also be loaded into the computer system 200 from other computer readable medium including magnetic tape, a ROM or integrated circuit, a magneto-optical disk, a radio or infra-red transmission channel between the computer module 201 and another device, a computer readable card such as a PCMCIA card, and the Internet and Intranets including email transmissions and information recorded on

websites and the like. The foregoing is merely exemplary of relevant computer readable mediums. Other computer readable mediums may be practiced without departing from the scope and spirit of the invention.

5 The preferred methods may alternatively be implemented in dedicated hardware such as one or more integrated circuits performing the functions or sub functions of the method. Such dedicated hardware may include graphic processors, digital signal processors, or one or more microprocessors and associated memories.

### **Industrial Applicability**

10 It is apparent from the above that the embodiments of the invention are applicable to the computer graphics and related industries.

The foregoing describes only some embodiments of the present invention, and modifications and/or changes can be made thereto without departing from the scope and spirit of the invention, the embodiments being illustrative and not restrictive.

WE CLAIM:

1. A method of combining digital image meta-data by storing self-describing attribute tags with one or more meta-data elements, each such attribute describing the action to be taken with this meta-data element and a similarly identified meta-data element from a second digital-image when the two images are combined.
2. A method as claimed in claim 1, wherein the self describing attribute tags include a tag which indicates that the meta-data elements in question should be discarded when the two images are combined.
3. A method as claimed in claim 1, wherein the self describing attribute tags include a tag which indicates that the meta-data elements in question should both be kept when the two images are combined.
4. A method as claimed in claim 1, wherein the self describing attribute tags include a tag which indicates that the meta-data elements in question should be kept as a single element when their values are the same, else discarded, when the two images are combined.
5. A method as claimed in claim 1, wherein in the event a said image has associated therewith a said meta-data element having no self describing attribute tag, then the method comprises the step of:  
supplying a default self describing attribute tag to said meta-data element which has no self describing attribute tag.

6. A method as claimed in claim 5, wherein the default attribute tag includes a tag which indicates that the meta-data elements in question should be kept as a single element when their values are the same, else discarded, when the images are combined.

5

7. A method of updating meta-data of an digital image by storing self describing attribute tags with one or more meta-data elements, each such attribute describing the action to be taken with this meta-data element when the digital image is transformed.

10 8. A method as claimed in claim 7, wherein the self describing attribute tags include a tag which indicates that the meta-data elements in question should be discarded when the image is transformed.

15 9. A method as claimed in claim 7, wherein the self describing attribute tags include a tag which indicates that the meta-data element in question should be kept when the image is transformed.

10. A method as claimed in claim 8, wherein in the event said image has associated therewith a said meta-data element having no attribute tag, then the method comprises the step of:

supplying a default attribute tag to said meta-data element.

11. A method of combining a plurality of images, wherein one or more of said plurality of images each have associated therewith meta-data comprising at least one meta-data element having at least one attribute tag which describes an action to be taken

with said meta-data element when said plurality of images are combined, the method comprising the steps of:

reading said at least one attribute to identify said action; and

combining the meta-data elements of the plurality of images in accordance with

5 said action.

12. A method as claimed in claim 10, wherein the at least one attribute tag includes a tag which indicates that the meta-data elements in question should be discarded when the images are combined.

10

13. A method as claimed in claim 10, wherein the at least one attribute tag includes a tag which indicates that the meta-data elements in question should both be kept when the images are combined.

15

14. A method as claimed in claim 10, wherein the at least one attribute tags includes a tag which indicates that the meta-data elements in question should be kept as a single element when their values are the same, else discarded, when the images are combined.

15. A method as claimed in claim 10, wherein in the event a said image has associated therewith a said meta-data element having no attribute tag, then the method comprises the step of:

20

supplying a default attribute tag to said meta-data element which has no attribute tag.



16. A method as claimed in claim 15, wherein the default attribute tag includes a tag which indicates that the meta-data elements in question should be kept as a single element when their values are the same, else discarded, when the images are combined.

5 17. A method of transforming an image, wherein said image has associated therewith meta-data comprising at least one meta-data element having at least one attribute tag which describes an action to be taken with said meta-data element when said image is transformed, the method comprising the steps of:

10 reading said at least one attribute to identify said action; and  
updating the at least one meta-data element of the image in accordance with said action.

15 18. A method as claimed in claim 17, wherein the at least one attribute tag includes a tag which indicates that the meta-data elements in question should be discarded when the image is transformed.

19. A method as claimed in claim 17, wherein the at least one attribute tag includes a tag which indicates that the meta-data element in question should be kept when the image is transformed.

20 20. A method as claimed in claim 17, wherein in the event said image has associated therewith a said meta-data element having no attribute tag, then the method comprises the step of:

25 supplying a default attribute tag to said meta-data element.

21. Apparatus for combining digital image meta-data by storing self-describing attribute tags with one or more meta-data elements, each such attribute describing the action to be taken with this meta-data element and a similarly identified meta-data element from a second digital-image when the two images are combined.

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22. Apparatus for updating meta-data of an digital image by storing self describing attribute tags with one or more meta-data elements, each such attribute describing the action to be taken with this meta-data element when the digital image is transformed.

10 23. Apparatus for combining a plurality of images, wherein one or more of said plurality of images each have associated therewith meta-data comprising at least one meta-data element having at least one attribute tag which describes an action to be taken with said meta-data element when said plurality of images are combined, the apparatus comprising:

15 means for reading said at least one attribute to identify said action; and  
means for combining the meta-data elements of the plurality of images in accordance with said action.

20 24. Apparatus for transforming an image, wherein said image has associated therewith meta-data comprising at least one meta-data element having at least one attribute tag which describes an action to be taken with said meta-data element when said image is transformed, the apparatus comprising:

means for reading said at least one attribute to identify said action; and  
means for updating the at least one meta-data element of the image in accordance  
25 with said action.

25. Computer readable medium including a computer program for combining digital image meta-data by storing self-describing attribute tags with one or more meta-data elements, each such attribute describing the action to be taken with this meta-data element  
5 and a similarly identified meta-data element from a second digital-image when the two images are combined.

26. Computer readable medium including a computer program for updating meta-data of an digital image by storing self describing attribute tags with one or more meta-  
10 data elements, each such attribute describing the action to be taken with this meta-data element when the digital image is transformed.

27. Computer readable medium including a computer program for combining a plurality of images, wherein one or more of said plurality of images each have associated  
15 therewith meta-data comprising at least one meta-data element having at least one attribute tag which describes an action to be taken with said meta-data element when said plurality of images are combined, the computer program comprising:

code for reading said at least one attribute to identify said action; and  
code for combining the meta-data elements of the plurality of images in  
20 accordance with said action.

28. Computer readable medium including a computer program for transforming an image, wherein said image has associated therewith meta-data comprising at least one meta-data element having at least one attribute tag which describes an action to be taken

5

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code for updating the at least one meta-data element of the image in accordance

511404US.doc

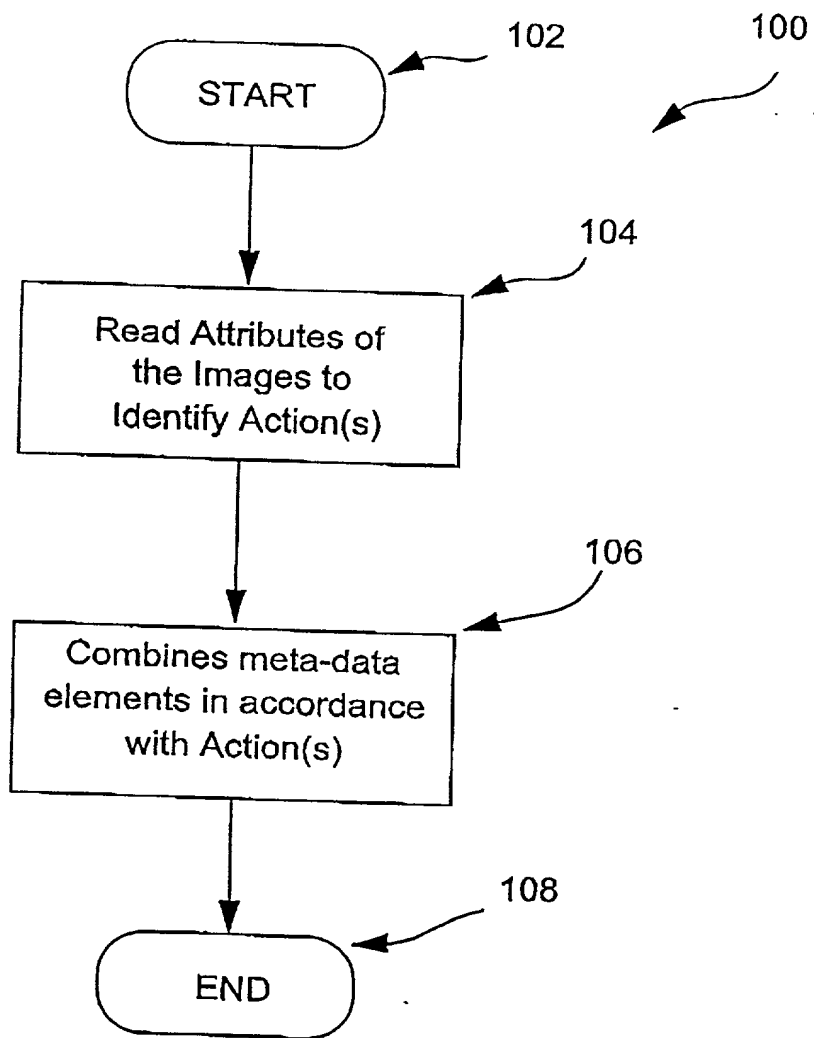
**ABSTRACT**

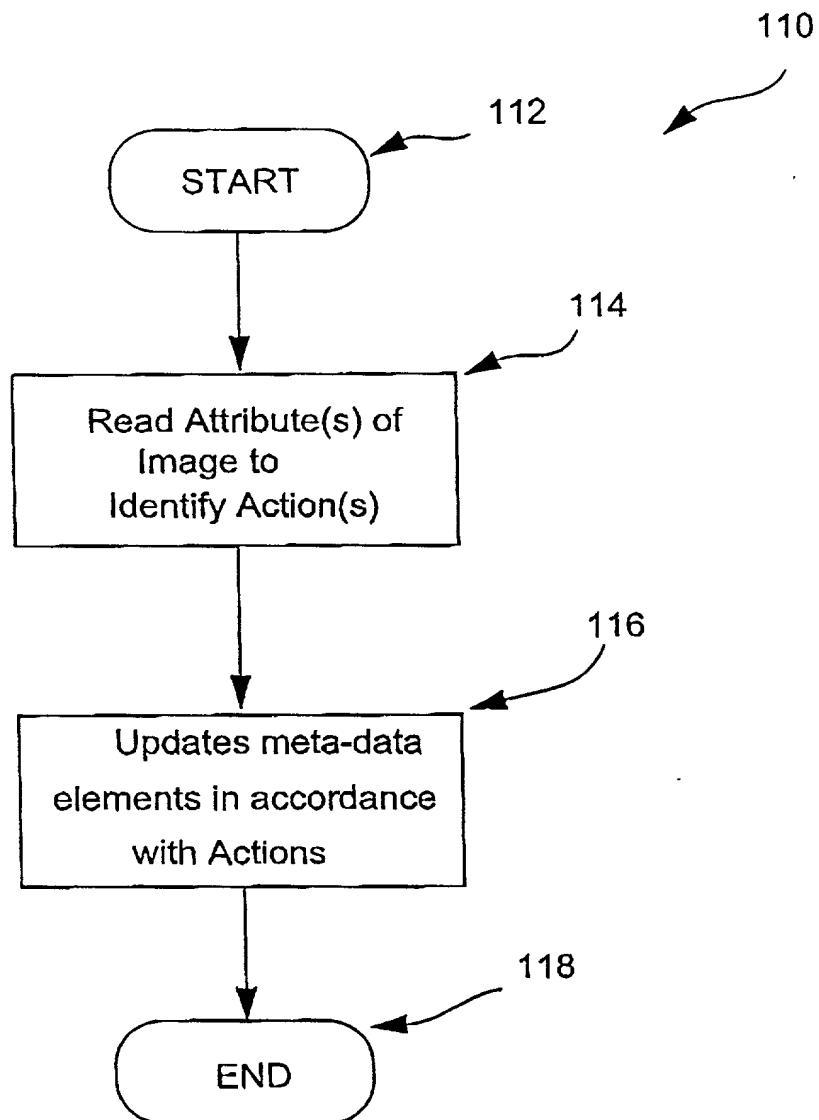
**COMBINING A PLURALITY OF IMAGES AND TRANSFORMING AN IMAGE  
5 HAVING ASSOCIATED META-DATA**

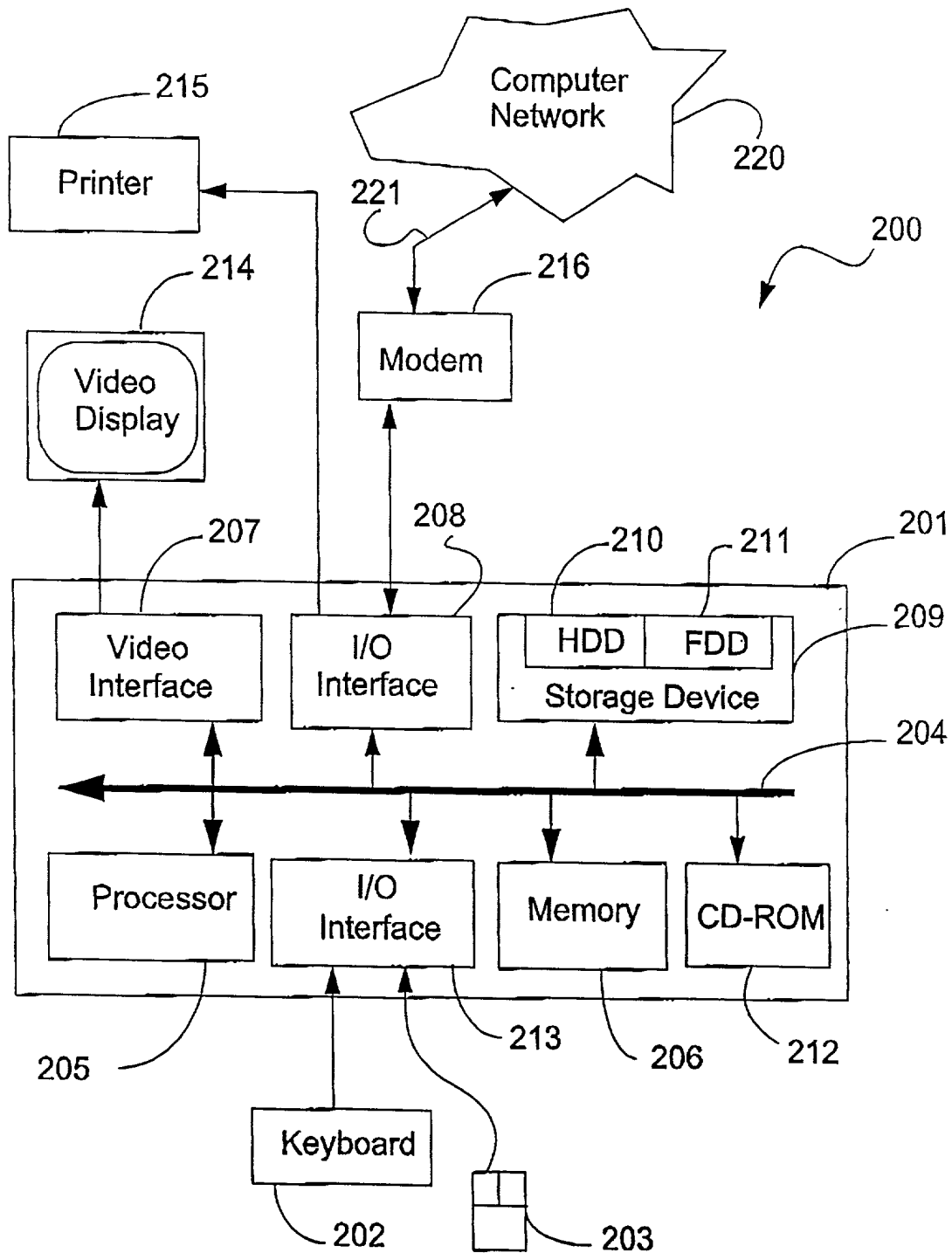
The method combines a plurality of images. The images each have associated meta-data comprising meta-data element(s) having merging attribute tag(s). The merging attribute describes an action to be taken with the corresponding meta-data element when the  
10 images are combined. The method first reads (104) the attribute(s) of the images to identify the action(s) and then combines the meta-data elements of the images in accordance with said action(s). In another embodiment, the method transforms an image.

Fig. 1A.

15

**FIG. 1A**

**FIG. 1B**

**FIG. 2**



COMBINED DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATION

(Page 1)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled COMBINING A PLURALITY OF IMAGES AND TRANSFORMING AN IMAGE HAVING ASSOCIATED META-DATA

the specification of which ☒ is attached hereto ☐ was filed on \_\_\_\_\_ as United States Application No. or PCT International Application No. \_\_\_\_\_ and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or §365(b), of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designates at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed:

Country	Application No.	Filed (Day/Mo./Yr.)	(Yes/No) Priority Claimed
Australia	PQ1525	July 9, 1999	Yes

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Application No.	Filed (Day/Mo./Yr.)	Status (Patented, Pending, Abandoned)
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I hereby appoint the practitioners associated with the firm and Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and direct that all correspondence be addressed to the address associated with that Customer Number:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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